Appendix E

Benefit/Cost Ratio

Benefit/Cost Ratio = B/C

Benefit = B = E * S * I * V ($/ft^2-yr)

Cost = C = (K / D) + M ($/ft^2-yr)

where
E = Effectiveness (%)
S = Seepage rate = 1.0 ft/day = 1.0 ft^3/ft^2-day
I = Irrigation Season 180 days/year
V = Value of Water = $50/acre-ft (acre-ft = 43,560 ft^3)

K = Construction Cost ($/ft^2)
D = Durability (years)
M = Maintenance Cost ($/ft^2-yr)

For Test Section A-1

E = Effectiveness = 95%
S = Seepage Rate = 1.0 ft^3/ft^2-day
I = irrigation Season = 180 days per year
V = Value of Water = $50/acre-ft
Acre-ft = 43,560 ft^3

K = Construction Cost = $2.43/ft^2
D = Durability = 50 years
M = Maintenance Cost = $0.005/ft^2-yr

Benefit = E * S * I * V = 0.95 * 1.0 * 180 * 50 / 43,560 = 0.196 ($/ft^2-yr)

Cost = (K / D) + M = (2.43 / 50) + 0.005 = 0.0536 ($/ft^2-yr)

B/C = 0.196 / 0.0536

B/C = 3.66